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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
10/712,949	11/13/2003	Gary P. Hagen	37,234-01	9542

7590 11/29/2005

BP America Inc.
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EXAMINER	
GRIFFIN, WALTER DEAN	
ART UNIT	**PAPER NUMBER**
1764	

DATE MAILED: 11/29/2005

Please find below and/or attached an Office communication concerning this application or proceeding.

Office Action Summary	Application No.	Applicant(s)	
	10/712,949	HAGEN ET AL.	
	Examiner	Art Unit	
	Walter D. Griffin	1764	

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) OR THIRTY (30) DAYS, WHICHEVER IS LONGER, FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

1)☒ Responsive to communication(s) filed on *13 November 2003*.

2a)☐ This action is **FINAL**. 2b)☒ This action is non-final.

3)☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

4)☒ Claim(s) *21-30* is/are pending in the application.

4a) Of the above claim(s) _____ is/are withdrawn from consideration.

5)☐ Claim(s) _____ is/are allowed.

6)☒ Claim(s) *21-30* is/are rejected.

7)☐ Claim(s) _____ is/are objected to.

8)☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

9)☐ The specification is objected to by the Examiner.

10)☒ The drawing(s) filed on *13 November 2003* is/are: a)☒ accepted or b)☐ objected to by the Examiner.

Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).

Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).

11)☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

12)☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).

a)☐ All b)☐ Some * c)☐ None of:

1.☐ Certified copies of the priority documents have been received.

2.☐ Certified copies of the priority documents have been received in Application No. _____.

3.☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

* See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

1) ☒ Notice of References Cited (PTO-892)
2) ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948)
3) ☐ Information Disclosure Statement(s) (PTO-1449 or PTO/SB/08) Paper No(s)/Mail Date _____.
4) ☐ Interview Summary (PTO-413) Paper No(s)/Mail Date. _____.
5) ☐ Notice of Informal Patent Application (PTO-152)
6) ☐ Other: _____.

DETAILED ACTION

Claim Rejections - 35 USC § 103

The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

> (a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negatived by the manner in which the invention was made.

The factual inquiries set forth in *Graham* v. *John Deere Co.*, 383 U.S. 1, 148 USPQ 459 (1966), that are applied for establishing a background for determining obviousness under 35 U.S.C. 103(a) are summarized as follows:

1. Determining the scope and contents of the prior art.
2. Ascertaining the differences between the prior art and the claims at issue.
3. Resolving the level of ordinary skill in the pertinent art.
4. Considering objective evidence present in the application indicating obviousness or nonobviousness.

This application currently names joint inventors. In considering patentability of the claims under 35 U.S.C. 103(a), the examiner presumes that the subject matter of the various claims was commonly owned at the time any inventions covered therein were made absent any evidence to the contrary. Applicant is advised of the obligation under 37 CFR 1.56 to point out the inventor and invention dates of each claim that was not commonly owned at the time a later invention was made in order for the examiner to consider the applicability of 35 U.S.C. 103(c) and potential 35 U.S.C. 102(e), (f) or (g) prior art under 35 U.S.C. 103(a).

Claims 21-30 are rejected under 35 U.S.C. 103(a) as being unpatentable over EP 0252606 in view of Schultz et al. (US 2,365,220) and Farkas et al. (US 2,472,152).

The EP reference discloses a process for the production of a fuel. The process comprises contacting a hydrocarbon fraction with oxygen in the presence of a heterogeneous catalyst system to produce an oxidized product with improved characteristics including improved cetane

number. The hydrocarbon fractions may contain sulfur or nitrogen. The oxidation catalyst contains metals such as chromium and may be supported on a suitable support material. The oxidized product is treated by separating an aqueous portion from the organic portion. The hydrocarbon to be oxidized may be hydrotreated prior to oxidation by contacting the hydrocarbon with a supported Group VI and/or VIII metal catalyst at hydrotreating conditions. The oxidation process may treat the entire hydrocarbon stream or a fraction of it. The oxidized fraction may be blended with another fraction having a poor cetane rating. See page 3, lines 1-35; page 4, lines 41-58; page 5, lines 1-32; page 20, lines 1-13; and the examples.

The EP reference does not disclose treating the oxidized product with a neutralizing agent, does not disclose recycling the catalyst as in claim 23, does not disclose the percent by weight of metal in the oxidation catalyst as in claim 25, does not disclose the partitioning of fractions, and does not disclose the catalysts of claims 25-27. The EP reference also does not disclose the blending of the claimed fractions as in claim 28.

The Schultz reference discloses the need for neutralizing acids in oxidized hydrocarbon streams. See page 6, right column, lines 23-54.

The Farkas reference discloses that oxidized hydrocarbon streams can be neutralized by contacting the streams with alkali metal carbonates, bicarbonates, and hydroxides. See column 9, line 30 through column 10, line 13.

It would have been obvious to one having ordinary skill in the art at the time the invention was made to have modified the EP process by neutralizing the oxidized product to the extent claimed with the neutralizing agents as suggested by Schultz and Farkas because a stable,

non-acidic product will result and carbonates and bicarbonates are neutralize acids in hydrocarbons.

It also would have been obvious to one having ordinary skill in the art at the time the invention was made to have modified the process of the EP reference by recycling the catalyst because the economics of the process will be improved by reducing the amount of new catalyst to be added to the process.

It also would have been obvious to one having ordinary skill in the art at the time the invention was made to have modified the process of the EP reference by partitioning fractions as claimed because the reference discloses that only a fraction of the feed may be treated by oxidizing. Therefore, one of skill in the art would choose the fractions to be treated that would result in the desired product.

It also would have been obvious to one having ordinary skill in the art at the time the invention was made to have modified the process of the EP reference by utilizing the catalysts of claims 25-27 because the metals disclosed by the EP reference include those claimed. Therefore, the use of the claimed catalysts in the EP process would be expected to result in the effective conversion of the hydrocarbons. Concerning the amounts of metals, one would utilize any amount that provides the desired oxidation activity.

It also would have been obvious to one having ordinary skill in the art at the time the invention was made to have modified the process of the EP reference by blending fractions as claimed because the EP reference discloses that the treated fraction may be blended with a poor cetane rating fraction. Therefore, if one desires to improve the cetane rating of a non-oxidized

fraction, one would blend the oxidized fraction with the non-oxidized fraction as suggested by the EP reference.

Response to Arguments

Applicants assert that the claimed process provides unexpected results concerning the level of sulfur, nitrogen, and acid in the product. This is not persuasive because the evidence does not appear to be commensurate in scope with the claimed invention.

Conclusion

The prior art made of record and not relied upon is considered pertinent to applicant's disclosure. The prior art not relied upon discloses oxidation processes.

Any inquiry concerning this communication or earlier communications from the examiner should be directed to Walter D. Griffin whose telephone number is (571) 272-1447. The examiner can normally be reached on M-F 6:30 to 4:00 with alternate Fridays off.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Glenn Caldarola can be reached on (571) 272-1444. The fax phone number for the organization where this application or proceeding is assigned is 571-273-8300.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see http://pair-direct.uspto.gov. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free).

Walter D. Griffin
Primary Examiner
Art Unit 1764

WG
November 21, 2005